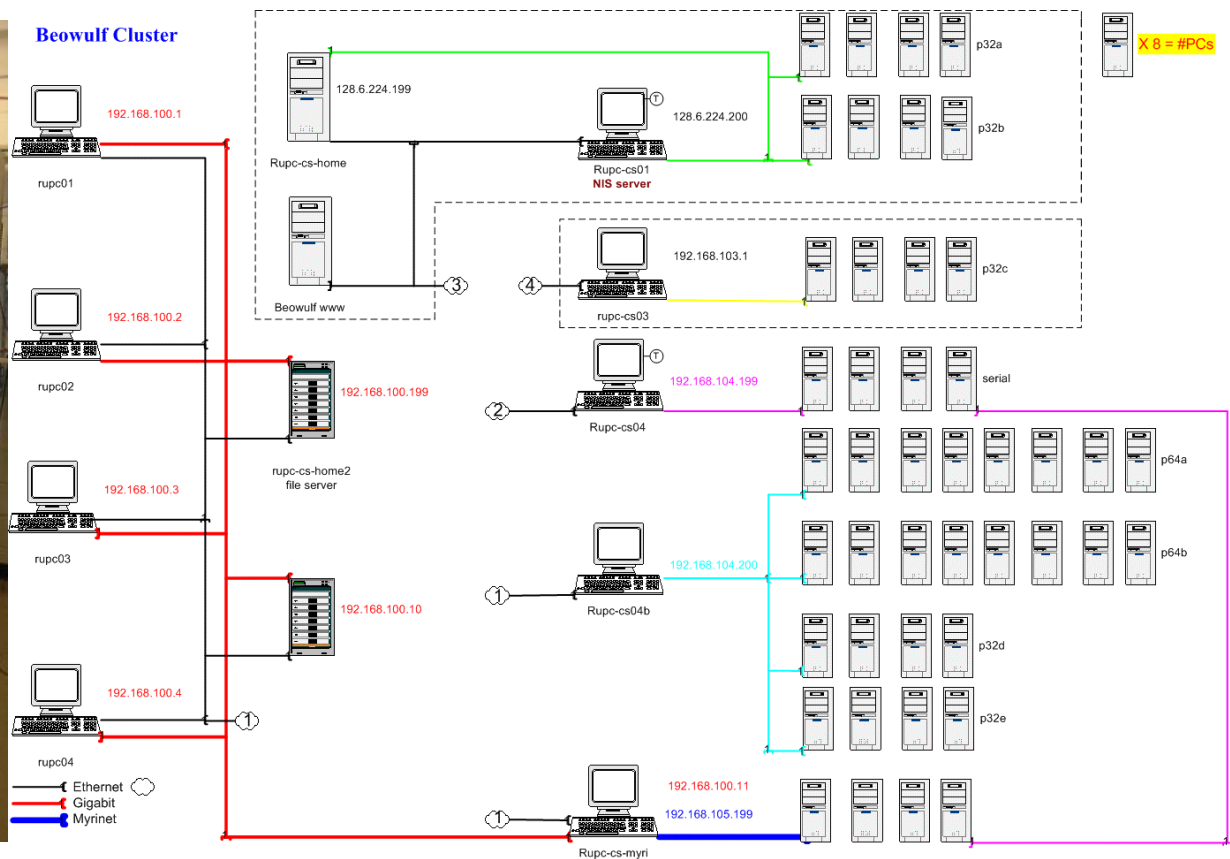




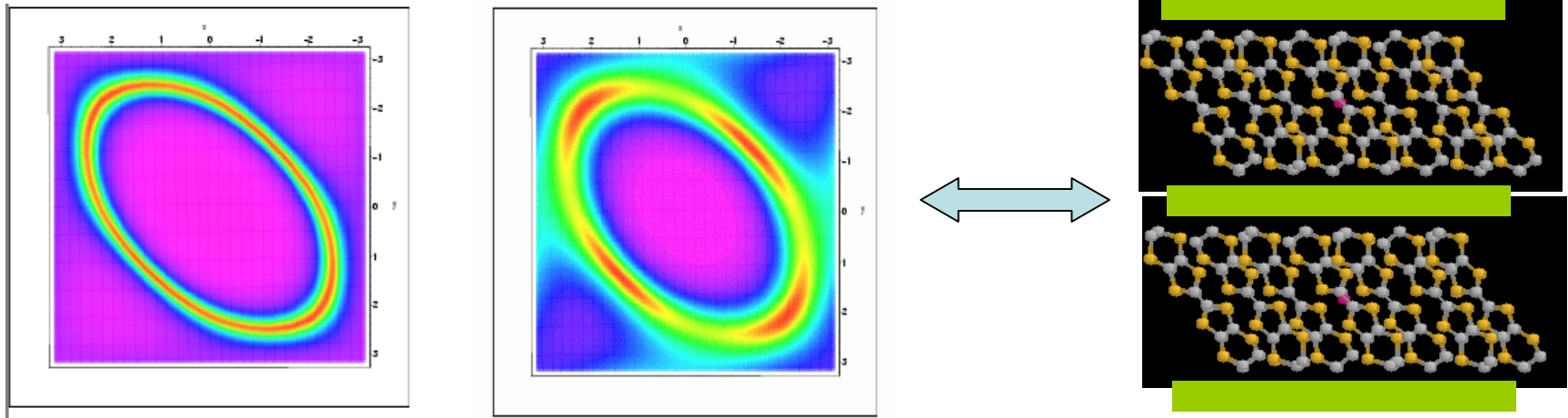
Beowulf Cluster



Design of a heterogeneous Rutgers Beowulf cluster, containing myrinet connectivity for bandwidth intensive calculations, Gigabit internet for highly parallel (Monte Carlo) algorithms and Ethernet connection for serial jobs to study complex materials.  
 Viktor Oudovenko. Rutgers University.  
 Funded by MRI grant DMR-0116068 with matching funds from Rutgers University.

Study of the low energy distribution of one particle spectral weight, in the  $\kappa$ -(ET)<sub>2</sub>X material (right) by Cellular DMFT and QMC on the Rutgers Beowulf Cluster, revealed the breakup of the Fermi surface as the Mott transition is approached.

*O. Parcollet, G. Biroli, G. Kotliar, Phys Rev. Lett. 92, 226402 (2004)*



Spectral intensity (red is high and blue is low) of a correlated material far from the transition follows the LDA Fermi surface (left panel). As the Mott transition is approached, the Fermi surface breaks up.